

WHAT IS CLAIMED IS:

1. A composition comprising an isolated or recombinant peptide comprising a subsequence of a Class II major histocompatibility molecule, wherein the peptide has the following properties,

5 (a) having a structure comprising R₁ - R₂ - R₃ - R₄ - R₅ - R₆ - R₇ - R₈ - R₉ - R₁₀ - R₁₁ - R₁₂ - R₁₃ - R₁₄ - R₁₅ - R₁₆,

wherein R₁ is Gln, Lys, or Arg; R₂ is Arg; R₃ and R₄ are members independently selected from the group consisting of all amino acids; R₅ is Ala, Glu, Asp, Val, Leu or Ile; R₆ and R₇ are members independently selected from the group consisting of all amino acids; R₈ is Thr; R₉, R₁₀, R₁₁, R₁₂, R₁₃, R₁₄, and R₁₅ are members independently selected from the group consisting of all amino acids; and, R₁₆ is Val;

10 (b) capable of generating an immune response to a non-Hodgkin's B cell lymphoma cell.

15 2. The composition of claim 1, wherein R₁ is Gln, Lys, or Arg; R₂ is Arg; R₃ is Arg; R₄ is selected from the group consisting of all amino acids; R₅ is Ala; R₆ and R₇ are members independently selected from the group consisting of all amino acids; R₈ is Thr; R₉ is selected from the group consisting of all amino acids; R₁₀ is Cys; R₁₁, R₁₂, R₁₃, R₁₄, and R₁₅ are members independently selected from the group consisting of all amino acids; and, R₁₆ is Val.

20 3. The composition of claim 2, wherein R₁ is Gln, Lys, or Arg; R₂ is Arg; R₃ is Arg; R₄ is Ala; R₅ is Ala; R₆ is Val; R₇ is Asp; R₈ is Thr; R₉ is Tyr; R₁₀ is Cys; R₁₁ is Arg; R₁₂ is His; R₁₃ is Asn; R₁₄ is Tyr; R₁₅ is Gly, and R₁₆ is Val.

25 4. The composition of claim 1, further comprising a pharmaceutically acceptable excipient.

5. The composition of claim 1, further comprising an adjuvant.

30 6. The composition of claim 1, wherein the non-Hodgkin's lymphoma cell is selected from the group consisting of a B-cell chronic lymphocytic leukemia/small lymphocytic lymphoma (B-CCL/SLL) cell, a lymphoplasmacytoid lymphoma (LPL) cell, a follicular

lymphoma (FL) cell, a mucosa-associated lymphoid tissue lymphoma (MALT) cell, a splenic lymphoma with villous lymphocytes (SLVL) cell and a mantle cell lymphoma cell.

7. A method for detecting a nucleic acid in a biological sample, wherein the nucleic acid
5 encodes a peptide capable of specifically binding to a Lym-1 antibody, the method comprising the following steps:

(a) contacting the sample with an oligonucleotide primer pair capable of amplifying a subsequence of an MHC nucleic acid, which subsequence encodes a polypeptide comprising a peptide of claim 1,
10 (b) amplifying the nucleic acid; and
(c) detecting the amplified nucleic acid.

8. The method of claim 7, wherein the MHC gene is HLA-DR 10.

9. The method of claim 7, wherein the subsequence encodes a peptide wherein R₁ is Gln, Lys, or Arg; R₂ is Arg; R₃ is Arg; R₄ is Ala; R₅ is Ala; R₆ is Val; R₇ is Asp; R₈ is Thr; R₉ is Tyr; R₁₀ is Cys; R₁₁ is Arg; R₁₂ is His; R₁₃ is Asn; R₁₄ is Tyr; R₁₅ is Gly, and R₁₆ is Val.

10. The method of claim 7, wherein the biological sample comprises a B cell.

11. The method of claim 10, wherein the B cell is a B lymphocytic non-Hodgkin's lymphoma cell.

12. The method of claim 11, wherein the non-Hodgkin's lymphoma cell is selected from the group consisting of a B-cell chronic lymphocytic leukemia/small lymphocytic lymphoma (B-CCL/SLL) cell, a lymphoplasmacytoid lymphoma (LPL) cell, a follicular lymphoma (FL) cell, a mucosa-associated lymphoid tissue lymphoma (MALT) cell, a splenic lymphoma with villous lymphocytes (SLVL) cell and a mantle cell lymphoma cell.

30 13. The method of claim 7, wherein the biological sample is a body fluid sample or a biopsy sample.

14. The method of claim 13, wherein the body fluid sample is a blood sample.

15. A kit for detecting a nucleic acid in a biological sample, wherein the nucleic acid encodes a peptide capable of specifically binding to a Lym-1 antibody, comprising an oligonucleotide primer pair capable of amplifying a subsequence of an MHC gene or gene product, which subsequence encodes a polypeptide comprising a peptide of claim 1.

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16. The kit of claim 15, wherein the MHC gene is HLA-DR 10.

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17. The kit of claim 15, wherein R₁ is Gln, Lys, or Arg; R₂ is Arg; R₃ is Arg; R₄ is Ala; R₅ is Ala; R₆ is Val; R₇ is Asp; R₈ is Thr; R₉ is Tyr; R₁₀ is Cys; R₁₁ is Arg; R₁₂ is His; R₁₃ is Asn; R₁₄ is Tyr; R₁₅ is Gly, and R₁₆ is Val.

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18. The kit of claim 15, further comprising an instructional material teaching a use of the kit, wherein the instructional material indicates that the kit is used for the detection of nucleic acid encoding a peptide reactive with a Lym-1 antibody and that the polypeptide is associated with non-Hodgkin's B cell lymphomas.

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19. A method for detecting an antibody reactive with a non-Hodgkin's B cell lymphoma cell, comprising:

(a) contacting a sample with a composition of claim 1 under immunologically reactive conditions, and

(a) detecting whether an antibody has specifically bound to the composition.

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20. The method of claim 19, wherein the sample is a biological sample.

21. The method of claim 19, wherein R₁ is Gln, Lys, or Arg; R₂ is Arg; R₃ is Arg; R₄ is Ala; R₅ is Ala; R₆ is Val; R₇ is Asp; R₈ is Thr; R₉ is Tyr; R₁₀ is Cys; R₁₁ is Arg; R₁₂ is His; R₁₃ is Asn; R₁₄ is Tyr; R₁₅ is Gly, and R₁₆ is Val.

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22. The method of claim 19, wherein the antibody is generated by a recombinant nucleic acid library.

23. The method of claim 22, wherein the recombinant nucleic acid is a phage display library.

24. The method of claim 19, wherein the composition is fixed to a solid surface.

25. A method for generating an antibody reactive with a non-Hodgkin's B cell lymphoma cell, comprising administering an immunogenically effective amount of a composition of
5 claim 1 to a mammal.

26. The method of claim 22, wherein R₁ is Gln, Lys, or Arg; R₂ is Arg; R₃ is Arg; R₄ is Ala; R₅ is Ala; R₆ is Val; R₇ is Asp; R₈ is Thr; R₉ is Tyr; R₁₀ is Cys; R₁₁ is Arg; R₁₂ is His; R₁₃ is Asn; R₁₄ is Tyr; R₁₅ is Gly, and R₁₆ is Val.

10 27. The method of claim 25, wherein the non-Hodgkin's lymphoma cell is selected from the group consisting of a B-cell chronic lymphocytic leukemia/small lymphocytic lymphoma (B-CCL/SLL) cell, a lymphoplasmacytoid lymphoma (LPL) cell, a follicular lymphoma (FL) cell, a mucosa-associated lymphoid tissue lymphoma (MALT) cell, a splenic lymphoma with villous lymphocytes (SLVL) cell and a mantle cell lymphoma cell.

20 28. An immunogenic composition capable of eliciting an immunogenic response directed to a polypeptide epitope, wherein the epitope comprises an amino acid sequence having a structure comprising

R₁ - R₂ - R₃ - R₄ - R₅ - R₆ - R₇ - R₈ - R₉ - R₁₀ - R₁₁ - R₁₂ - R₁₃ - R₁₄ - R₁₅ - R₁₆,
wherein R₁ is Gln, Lys, or Arg; R₂ is Arg; R₃ and R₄ are members independently selected from the group consisting of all amino acids; R₅ is Ala, Glu, Asp, Val, Leu or Ile; R₆ and R₇ are members independently selected from the group consisting of all amino acids; R₈ is Thr; R₉, R₁₀, R₁₁, R₁₂, R₁₃, R₁₄, and R₁₅ are members independently selected from the group consisting of all amino acids; and, R₁₆ is Val.

25 29. The immunogenic composition of claim 28, wherein R₁ is Gln, Lys, or Arg; R₂ is Arg; R₃ is Arg; R₄ is Ala; R₅ is Ala; R₆ is Val; R₇ is Asp; R₈ is Thr; R₉ is Tyr; R₁₀ is Cys; R₁₁ is Arg; R₁₂ is His; R₁₃ is Asn; R₁₄ is Tyr; R₁₅ is Gly, and R₁₆ is Val.

30 30. The immunogenic composition of claim 28, wherein the immunogenic response generates antibodies specific for the polypeptide epitope.

31. A method of inducing an immunogenic response directed to a polypeptide epitope, comprising administering an immunogenically effective amount of a composition comprising a polypeptide epitope to a mammal,

wherein the epitope comprises an amino acid sequence having a structure

5 comprising R₁ - R₂ - R₃ - R₄ - R₅ - R₆ - R₇ - R₈ - R₉ - R₁₀ - R₁₁ - R₁₂ - R₁₃ - R₁₄ - R₁₅ - R₁₆,

wherein R₁ is Gln, Lys, or Arg; R₂ is Arg; R₃ and R₄ are members

independently selected from the group consisting of all amino acids; R₅ is Ala, Glu, Asp,

Val, Leu or Ile; R₆ and R₇ are members independently selected from the group consisting of

all amino acids; R₈ is Thr; R₉, R₁₀, R₁₁, R₁₂, R₁₃, R₁₄, and R₁₅ are members independently

10 selected from the group consisting of all amino acids; and, R₁₆ is Val.

32. The method of claim 31, wherein R₁ is Gln, Lys, or Arg; R₂ is Arg; R₃ is Arg; R₄ is

Ala; R₅ is Ala; R₆ is Val; R₇ is Asp; R₈ is Thr; R₉ is Tyr; R₁₀ is Cys; R₁₁ is Arg; R₁₂ is His;

R₁₃ is Asn; R₁₄ is Tyr; R₁₅ is Gly, and R₁₆ is Val.

33. The immunogenic composition of claim 31, wherein the immunogenic response

generates antibodies specific for the polypeptide epitope.

34. The method of claim 31, wherein the mammal is a human, a mouse or a rabbit.

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